

Notice of Allowability

Application No.

09/992,736

Examiner

Lewis A. Bullock, Jr.

Applicant(s)

BHARADHWAJ, RAJEEV

Art Unit

2126

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 7/19/04.
2. ☒ The allowed claim(s) is/are 9, 15, 19 and 28-35 now renumbered 1-11.
3. ☒ The drawings filed on 19 July 2004 are accepted by the Examiner.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

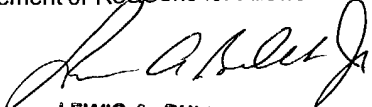
Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☒ Information Disclosure Statements (PTO-1449 or PTO/SB/08),
Paper No./Mail Date 7/19/04
4. ☐ Examiner's Comment Regarding Requirement for Deposit
of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☒ Interview Summary (PTO-413),
Paper No./Mail Date 9/2/04
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____


LEWIS A. BULLOCK, JR.
PRIMARY EXAMINER

DETAILED ACTION

Claims 9,15, 19 and 28-35 are allowed.

EXAMINER'S AMENDMENT

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Robert Hayden on September 2, 2004.

The application has been amended to correct antecedent basis as followed:
Claim 32 (Amended). A computer-implemented method for multi-level memory domain protection, comprising:

executing calling-code at a protection level in a first process pair calling for execution of targeted code at the protection level in a second process pair; and

inter-group context switching from the first process pair to the second process pair, wherein the inter-group context switching establishes two levels of protection within the protection level.

2. The following is an examiner's statement of reasons for allowance: The claims are allowable for at least the following reasoning: Claims 9, 15, 19 and 28-30 all detail protecting the domain code from the user code by locating the domain code in the non-

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executable reserved portion of the user process context second protection level.

Claims 31-35 all detail protecting domain code executing at a protection level from user code executing at the protection level by context switching to establish two levels of protection within the protection level. Applicant's invention enables three levels of memory domain protection to be achieved on hardware that supports only two levels of protection (page 11, lines 7-9). The third level is achieved by the user process context having a reserved area in which the domain code is located (page 11, lines 17-20). The user process context having a reserved area that stores domain code is not taught by any of the references alone or in combination. Additionally, it is this reserved area within the user process context that establishes two levels of protection within the protection level. The establishing of two levels within the protection level in essence, allows the use of three levels and as explained above is not taught by any of the references alone or in combination. The cited prior art of record at best teaches that domain codes make cross-domain calls to one another and the context is saved on a stack via context switching (see Kargar). The cited prior art of record do not teach or allude to a user domain have a non-executable reserved portion wherein domain code resides or the establishing of two levels of protection within the protection level as defined in the claims and specification. Therefore, the claims are allowable over the prior art of record.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably

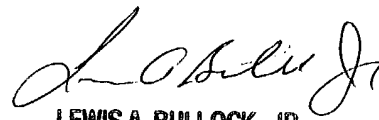
accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lewis A. Bullock, Jr. whose telephone number is (703) 305-0439. The examiner can normally be reached on Monday-Friday, 8:30 am - 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Meng An can be reached on (703) 305-9678. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

September 2, 2004


LEWIS A. BULLOCK, JR.
PRIMARY EXAMINER